

Applicant : Daniel R. Jacques
App. No. : 10/647,362
Page No. : 7

REMARKS

Applicant respectfully requests reconsideration of this application. Claims 1-5, 9-17, 19-25 and 29-31 are pending. Claims 1, 21 and 23 are currently amended to more particularly point out and distinctly claim the subject matter that Applicant believes is the invention. Claims 26-28 were previously canceled, and claims 6-8 and 18 were previously withdrawn. Claims 29-31 are newly presented, and are essentially a reintroduction of previously canceled claims 26-28.

I. Summary of the Invention

The present invention relates to a portable foamer for spraying effluent in foam form. The claimed invention includes a mixing chamber within the flow controller where pressurized air and liquid combine after having been separately delivered from the tank until they combine in the mixing chamber.

As defined in amended claim 1, the present invention is directed to a hand-operated portable sprayer having a tank, flow controller, and segregated air and liquid delivery systems. The flow controller defines a mixing chamber where pressurized air and liquid combine after being segregated from the point they exited the tank until the point at which they combine in the mixing chamber.

As defined in amended claim 21, the present invention is directed to a hand-operated, portable sprayer including a sealed, pressure-resistant tank. The tank is filled with liquid and includes a pump assembly to pressurize the headspace of the tank. The tank also has a liquid withdrawal tube inserted near the bottom of the tank that is in fluid communication with a liquid transport hose and an air transport hose in fluid communication with the headspace of the

Applicant : Daniel R. Jacques
App. No. : 10/647,362
Page No. : 8

tank. The liquid transport hose and the air transport hose are also both in fluid communication with a with a flow controller defining a mixing chamber where the liquid and the air converge after being transported separately from the tank. The flow controller has a valve for controlling the flow of effluent from the flow controller.

As defined in newly presented claim 29, the present invention is directed to a portable sprayer. The sprayer includes a tank and a mixing chamber separate from the tank. The tank and mixing chamber are connected by an air delivery system and a fluid delivery system segregated from the air delivery system such that the air and fluid are delivered separately from the tank to the mixing chamber. The air and fluid combine in the mixing chamber to form foam. This foam is then expelled from the sprayer by the flow controller.

As can be seen, the amended claims all recite a sprayer having a mixing chamber. The mixing chamber is separate from the tank and is the point where the compressed air and liquid first converge after being separately transported from the tank. This configuration produces higher quality, more consistent foam than is produced by the prior art foam generators where air and effluent combine to form foam that is then transported through a long hose prior to being expelled. Additionally, as recited in some of the claims, the presence of a mixing medium within the mixing chamber promotes the generation of highly consistent foam, and nowhere in the prior art is a mixing medium within a mixing chamber disclosed.

II. Art Rejections

Although the prior art discloses a wide variety of spraying devices, it is respectfully submitted that the subject matter of the claims is not anticipated by or obvious in

Applicant : Daniel R. Jacques
App. No. : 10/647,362
Page No. : 9

view of the art. Applicant respectfully submits that the subject matter of the submitted claims is patentable over the art of record. The claims recite a sprayer that generates high-quality foam utilizing segregated liquid and air delivery tubes connecting the tank to a mixing chamber at a point just prior to that at which the foam is expelled.

A. Rejections based on Altenburger

As originally presented, claims 1-2, 11-17, and 21-22 were rejected under 35 U.S.C 102(b) as being unpatentable over U.S. Patent 1,979,135 to Altenburger. Applicant respectfully traverses this rejection as conceivably applied to the amended claims.

Altenburger is directed to a sprayer that includes two separate lines to carry liquid and compressed gas to the spray nozzle. We agree with Examiner's assertion that Altenburger does not disclose a mixing chamber. (Page 3 of Office Action dated August 29, 2006). Because the amended claims as presently submitted now all recite the presence of a mixing chamber, these claims are not anticipated by Altenburger.

B. Rejections based on Altenburger and Hayes

As originally presented, claims 3-5 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Altenburger in view of U.S. Patent 3,801,015 to Hayes. Applicant respectfully traverses this rejection as conceivably applied to the amended claims.

It is well settled that obviousness cannot be established by combining the teachings of the prior art, absent some teaching, suggestion, or incentive supporting the combination. In re Geiger, 2 U.S.P.Q.2d 1276 (Fed. Cir. 1987); ACS Hospital Systems, Inc. v. Montefiore Hospital, 221 U.S.P.Q. 929 (Fed. Cir. 1984). Even if the prior art can be modified to

Applicant : Daniel R. Jacques
App. No. : 10/647,362
Page No. : 10

obtain the claimed invention, that fact alone does not render the claims obvious unless the prior art suggests the desirability of the modification. In re Laskowski, 10 U.S.P.Q.2d 1397 (Fed. Cir. 1989); In re Gordon, 221 U.S.P.Q. 1125 (Fed. Cir. 1984).

Hayes is directed to a foam generating apparatus. It is asserted that Hayes discloses a mixing chamber; however, the component in question is affixed to the tank and is located a significant distance from the point at which the foam effluent is expelled. Additionally, Hayes does not disclose segregated lines carrying the fluid and compressed gas from the tank to the flow controller.

Applicant respectfully submits that the proposed combination of Altenburger and Hayes does not render the subject matter of the amended claims obvious. In summary, (1) there is no motivation or suggestion to combine Altenburger and Hayes to obtain the subject matter of the amended claims, and 2) modifying Altenburger to obtain the invention of the amended claims would destroy the intended function of Altenburger.

First, there is no motivation or incentive to modify the sprayer of Altenburger to obtain the foam generator of the present invention. As described above, Altenburger discloses a sprayer designed to impart maximum carrying power into a liquid effluent. It is not directed to the generation or discharge of foam, and is therefore fundamentally different from the claimed invention. Hayes describes a foamer where foam generated in the mixing chamber travels through a hose prior to being expelled, which can negatively impact foam quality. In this way, Hayes is typical of the prior art that the present invention is intended to replace. There is no suggestion in the references that using the segregated supply lines of Altenburger whose purpose

Applicant : Daniel R. Jacques
App. No. : 10/647,362
Page No. : 11

is to create high-velocity liquid effluent in conjunction with the mixing chamber of Hayes would create higher quality foam. Further, the prior art does not teach or suggest the desirability of relocating the mixing chamber of Hayes from adjacent to the tank as Hayes teaches to within the flow controller as is in amended claims 3-5 and 23.

Second, Altenburger fails to teach a portable foam generator. Instead, Altenburger is directed to a sprayer whose intended function is to increase the carrying capacity of liquid effluent. (Col. 1, Lns. 13-15). In other words, Altenburger is attempting to provide a liquid stream that is expelled as far as possible and is not attempting to create a foam effluent. This function is in direct opposition with the function of the subject invention which is to generate high quality foam. It seems quite clear that the generation of foam would materially reduce the carrying power of the effluent. As can be seen, modifying Altenburger to generate foam would destroy Altenburger's intended function of imparting maximum carrying power into a liquid effluent.

C. Rejections based on Altenburger and Petit

As originally presented, claims 24-25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Altenburger in view of U.S. Patent 5,328,099 to Petit. Applicant respectfully traverses this rejection as conceivably applied to the amended claims.

Petit is directed to a single-use sprayer utilized for disbursing a single dose of solid powder for inhalation in medical applications. Petit teaches a grid to prevent the powder from infiltrating the piston delivery mechanism of the sprayer and prevent the friction-generating powder from corrupting the movement of the bead within the cylinder.

Applicant : Daniel R. Jacques
App. No. : 10/647,362
Page No. : 12

Applicant respectfully submits that the combination of Altenburger and Petit does not teach or suggest the subject matter of the amended claims. The prior art also does not provide motivation for modifying Altenburger to obtain the subject matter of the amended claims. In summary, 1) even if you combine the references, they do not disclose every element of the claim; 2) there is no motivation or suggestion for modifying Petit to obtain the subject matter of the amended claims; and 3) Petit is non-analogous art and, as such, cannot support an obviousness rejection.

First, even if you combine the liquid effluent sprayer of Altenburger with the single-dose powder sprayer of Petit, the combination does not disclose a mixing medium used to generate foam. The grid of Petit that segregates the powder from the piston is not a mixing medium that combines liquid and air to promote generation of a foam. Therefore, even if Altenburger and Petit were combined, the foam-generating mixing medium within the mixing chamber is still not made obvious by the combination.

Second, there is no motivation or incentive to modify the single-dose powder sprayer of Petit to obtain the foam generator of the present invention. As described above, Petit discloses a grid that serves to segregate the powder to be emitted from the piston delivery mechanism. Accordingly, Petit does not provide any motivation or incentive for providing the foamer of the present invention with a mixing medium whose function is to generate foam – let alone a mixing medium located in a mixing chamber where liquid effluent and compressed air come together for the first time just prior to being expelled in foam form. In fact, Petit and

Applicant : Daniel R. Jacques
App. No. : 10/647,362
Page No. : 13

Altenburger both fail to even recognize the problem of how to generate highly consistent foam, and therefore, fail to motivate one to solve it.

Third, the single dose sprayer for disbursing powder of Petit is not analogous to the subject matter of the present invention. Petit and the present invention are not directed to the same field of invention. The subject invention is directed to a foam generator, and Petit is directed to a single-use device for delivering a metered dose of powder. The grid 10 of Petit serves to segregate the powder that is to be expelled from infiltrating and compromising the function of the piston of the sprayer. When the sprayer is actuated, the bead is thrust forward within the piston striking the grid 10 causing the powder to be emitted out of the sprayer into the surrounding air. The grid is not used to promote the generation of foam. Its only function is to provide a barrier between the powder and the piston.

III. Claims 9 and 19-20

Although the Office Action Summary indicates that claims 9 and 19-20 were rejected, the Office Action does not articulate any rejection of these claims. Applicant therefore assumes that these claims are not rejected. If they were rejected, Applicant respectfully submits that these claims are allowable based on the arguments discussed above.

In addition to the arguments presented above, claims 9 and 19-20 recite additional subject matter and are therefore even more clearly allowable. With respect to claim 9, no reference has been cited disclosing an inlet orifice for an external feed line on the exterior surface of the tank. With respect to claim 19, it is respectfully submitted that the mixing medium is not made obvious by the grid of Petit for the reasons stated above. With respect to claim 20,

Applicant : Daniel R. Jacques
App. No. : 10/647,362
Page No. : 14

the mixing medium being a fibrous mesh is also not made obvious by the grid of Petit for the reasons stated above.

IV. Newly Presented Claims 29-31

Claims 29-31 were presented as claims 26-28 in the original application. However, claims 26-28 were canceled during the first prosecution of this application when it was asserted that the application would be allowed if those claims were canceled. Because the application is now undergoing a second prosecution after being pulled from issuance, Applicant wishes to reintroduce previously canceled claims 26-28 as newly presented claims 29-31.

Applicant asserts that these claims are allowable based on the arguments submitted above because these claims all recite a mixing chamber in fluid communication with segregated delivery lines.

[The remainder of this page is intentionally blank.]

Applicant : Daniel R. Jacques
App. No. : 10/647,362
Page No. : 15

CONCLUSION

In view of the above Amendments and Remarks, it is respectfully submitted that the application is in condition for allowance. A notice to that effect is earnestly and respectfully solicited. If the Examiner believes that it would be helpful to resolve any outstanding issues, he is invited to contact the undersigned.

Respectfully submitted,

DANIEL R. JACQUES

By: Warner Norcross & Judd LLP

/William P. Dani/
William P. Dani
Registration No. 37,810
900 Fifth Third Center
111 Lyon Street, N.W.
Grand Rapids, MI 49503-2487
(616) 752-2197

WPD/MAK/nkb

1331912